

## CHICAGO FORECAST DISTRICT.

The month was an unusually stormy one for the season on the upper lakes, and it was marked by a larger number of marine disasters than has occurred during any previous month for many years.

During the storm of the 7-8th several vessels were wrecked at the foot of Lake Huron. The disasters were due, however, rather to dense smoke than to high winds, and several shipmasters mistook lights on the shore about three miles from the end of the lake for lights at the entrance of the St. Clair River, and went ashore. Brisk and possibly high northerly winds were forecast for Lake Huron the morning of the 6th, and on the morning of the 7th the forecast was for brisk to high northerly winds. High winds prevailed on the upper lakes from the 15th to 17th, impeding navigation and causing some wrecks. The approach of this storm was announced in the forecasts and by the display of storm warnings. High and dangerous winds occurred from the 21st to 25th, but as vessel men sought shelter as soon as the warnings were hoisted no wrecks of consequence occurred.

General warnings were issued well in advance of the frosts of the middle part of the month.—*H. J. Coz, Professor.*

## NEW ORLEANS FORECAST DISTRICT.

A disturbance of tropical origin for which storm warnings were ordered, reached the middle Gulf coast on the 17th, attended by high winds at the mouth of the Mississippi River and at points along the Mississippi coast. Timely frost warnings were issued for Arkansas on the 18th, and on the morning of the 19th unseasonably cold weather prevailed over Arkansas and Louisiana, the temperature at New Orleans being the lowest ever recorded in September.—*I. M. Cline, Forecast Official.*

## DENVER FORECAST DISTRICT.

Apart from the frosts that visited the agricultural sections of this district, and which were accurately forecast, the weather conditions were such as to require no special warnings.—*F. H. Brandenburg, Forecast Official.*

## SAN FRANCISCO FORECAST DISTRICT.

On the 20th conditions were such that warnings were distributed to fruit growers to be prepared to cover promptly. On the morning of the 21st rain warnings were issued to raisin makers and prune growers, also to all railroad station agents where grain was likely to be held in sacks and exposed to the weather. These warnings were of the greatest benefit and where losses occurred they were due to the inability of those warned to remove their goods.—*Alexander G. McAdie, Professor.*

## PORTLAND, OREG., FORECAST DISTRICT.

On the evening of the 20th conditions indicated high winds at sea, and warnings were issued to Washington and Oregon ports. The storm proved to be the first one of this season of a type peculiar to the winter months, and was attended by high winds and rain throughout the district. The frosts of the month were forecast sufficiently far in advance to allow a wide distribution of the warnings.—*Edw. A. Beals, Forecast Official.*

## HAVANA, CUBA, FORECAST DISTRICT.

The only severe storm of the month was first indicated to the east-southeast of St. Kitts on the afternoon of the 10th. During the succeeding five days this disturbance moved slowly westward over the Caribbean Sea, its approach being heralded by full and timely advices and warnings. Reports received from points in the southern districts of the islands of the Greater Antilles and from vessels that entered its area show that the storm possessed considerable strength, which was manifested largely as heavy rain that flooded rivers and smaller streams.—*Wm. B. Stockman, Forecast Official.*

## AREAS OF HIGH AND LOW PRESSURE.

*Movements of centers of areas of high and low pressure.*

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long. W.	Length.	Duration.	Daily.	Hourly.
<b>High areas.</b>										
I.....	5, a.m.	54	121	9, p.m.	38	78	Miles. 2,875	Days. 4.5	Miles. 572	Miles. 22.8
II.....	15, p.m.	48	125	21, a.m.	47	58	4,470	5.5	818	33.9
III.....	18, a.m.	54	121	22, a.m.	45	67	8,545	4.0	885	36.8
IV.....	23, a.m.	53	108	27, a.m.	41	70	2,050	4.0	512	21.3
Sums.....							12,540	18.0	2,732	115.8
Mean of 4 paths.....							3,160		696	29.0
Mean of 18.0 days.....									702	29.2
<b>Low areas.</b>										
I.....	1, a.m.	44	116	6, a.m.	47	92	2,150	5.0	430	17.9
II.....	8, p.m.	41	97	11, p.m.	48	69	1,600	3.0	538	23.2
III.....	9, p.m.	39	108	14, a.m.	47	58	3,250	4.5	722	30.0
IV.....	11, a.m.	16	68	18, p.m.	35	76	3,000	7.5	400	16.7
V.....	12, a.m.	48	125	17, a.m.	47	58	3,575	5.0	715	29.8
VI.....	20, a.m.	51	120	24, a.m.	47	53	3,500	4.0	875	36.4
VII.....	22, p.m.	40	122	25, a.m.	50	100	1,700	2.5	680	26.3
VIII.....	27, a.m.	30	88	30, p.m.	46	60	2,300	3.5	629	26.2
Sums.....							20,975	35.0	4,964	207.5
Mean of 8 paths.....							2,622		623	26.9
Mean of 35.0 days.....									599	24.8

For graphic presentation of these highs and lows see Charts I and II.—*Geo. E. Hunt, Chief Clerk Forecast Division.*

## RIVERS AND FLOODS.

The usual seasonal low water stages prevailed in the upper Mississippi River during the month of September, with extreme fluctuations of less than one foot over that portion north of St. Louis, Mo. In the lower river the average stages were somewhat higher than during August, 1901, the influence of the rise of that month not having entirely disappeared. At St. Paul, Minn., navigation was suspended for the season on the last day of the month.

The average stages of the Missouri River were about one foot lower than during the preceding month. At Sioux City, Iowa, on the 12th, the river reached its highest recorded September stage, 9.1 feet, one of the consequences of the heavy storm of the previous day.

Nothing of interest was reported from other rivers except those of the South Atlantic States, where the heavy rains of the 16th and 17th caused a general and decided rise. The Cape Fear River at Fayetteville N. C., rose 39.6 feet from the 16th to the 20th, passing the danger line of 38 feet on the 19th, and reaching a crest stage of 43.6 feet on the morning of the 20th.

The flood stages of the rivers of South Carolina were well forecast, and the following report thereon was made by Mr. L. N.